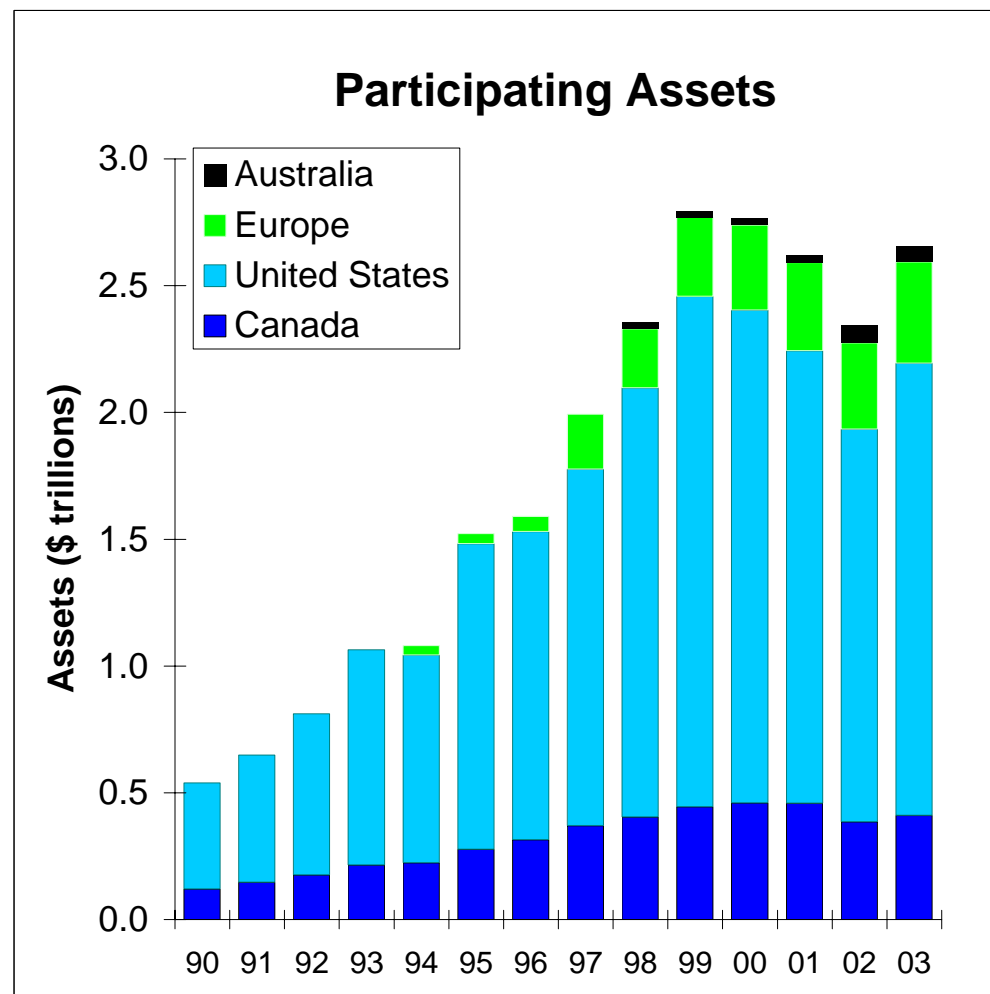
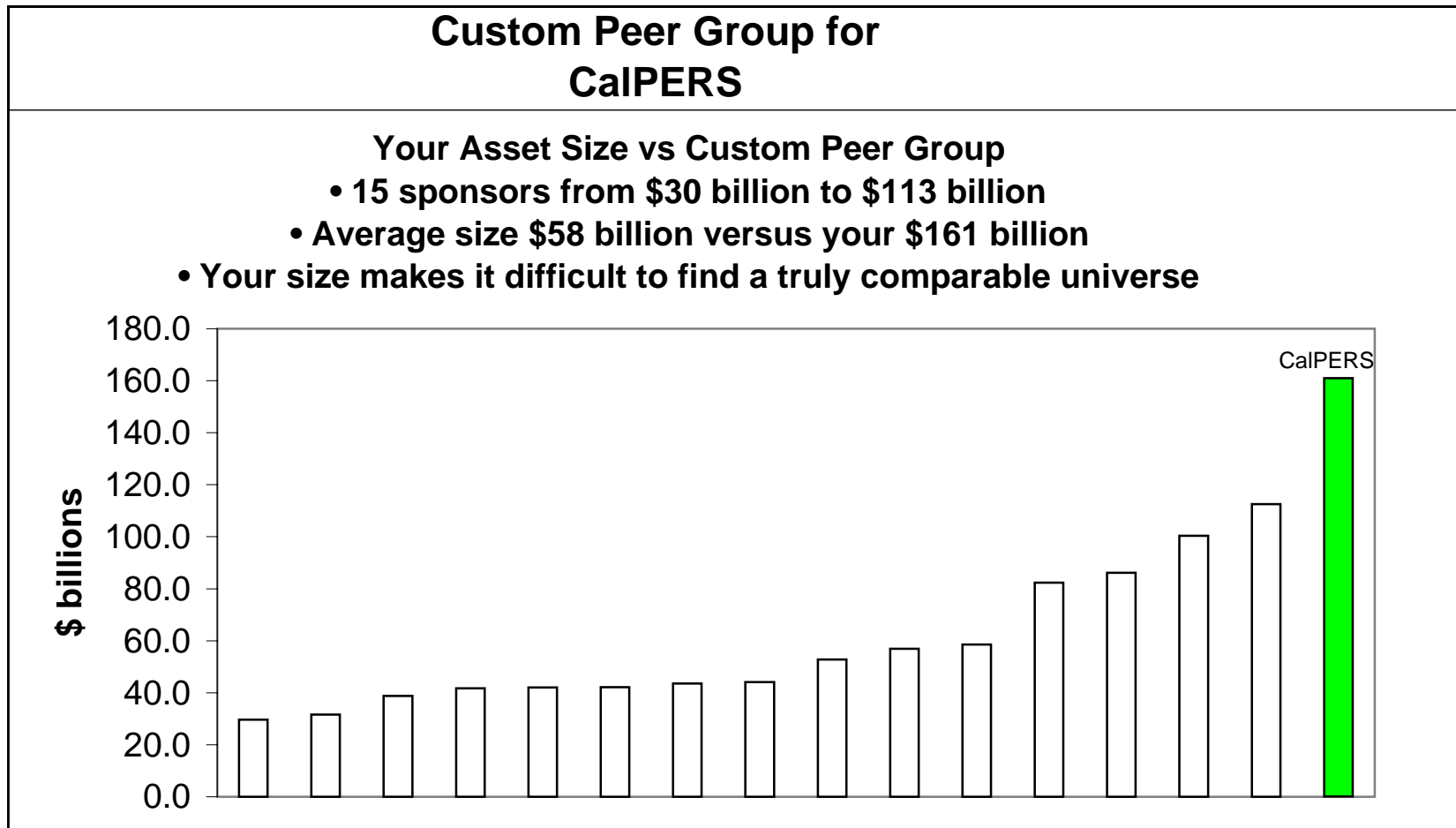


# This benchmarking report compares your cost and return performance to CEM's extensive pension performance database.

- 134 US pension funds participate. They represent 30% of U.S. defined benefit assets. The median US fund had assets of \$4.1 billion, while the average US fund had assets of \$13.2 billion. Total participating US assets were \$1.8 trillion.
- 85 Canadian funds participate representing 70% of Canadian defined benefit assets.
- 15 European funds participate with aggregate assets of €401 billion. Included are funds from The Netherlands, Norway and Ireland.
- 11 Australian funds participate with aggregate assets of A\$60 billion.
- For you, the most meaningful comparisons for returns and value added are to the US universe.



**The most valuable comparisons for cost performance are to your custom peer group because size impacts costs.**



In order to preserve client confidentiality, we do not disclose your peers' names in this document because of the Freedom of Information Act.

# What gets measured gets managed, so it is critical that you measure and compare the right things:

## 1. Policy Return

How did your policy asset mix decision compare to other funds?

## 2. Implementation Value Added

Are your implementation decisions (i.e., mostly active management) adding value?

## 3. Implementation Risk

How much risk was taken to obtain your Implementation Value Added?

## 4. Costs

Are your costs reasonable?  
Costs matter and can be managed.

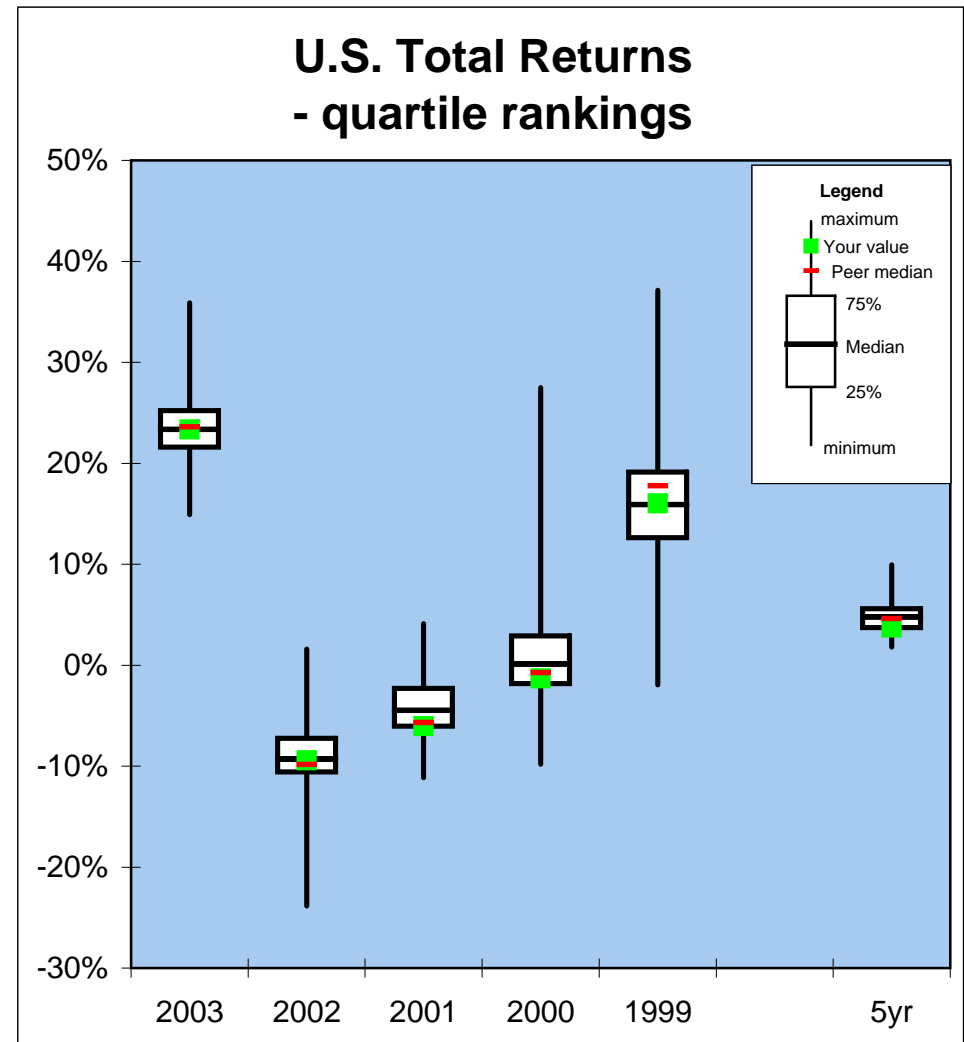
# Total Returns, by themselves, are the wrong thing to compare and focus on.

They do not tell you the reasons behind good or bad relative performance.

Therefore, we separate Total Return into its more meaningful components - Policy Return as determined by CalPERS Strategic Asset Allocation and Implementation Value Added as determined by Staff's implementation of Board Policy.

	<b>Your 5-yr</b>
Total Fund Return	3.7%
Policy Return	2.8%
Implementation Value Added	0.9%

This approach enables you to understand the contribution from both policy asset mix decisions (which is the Board's responsibility) and implementation decisions which is the Investment Staff's responsibility.



## 1. Policy Returns

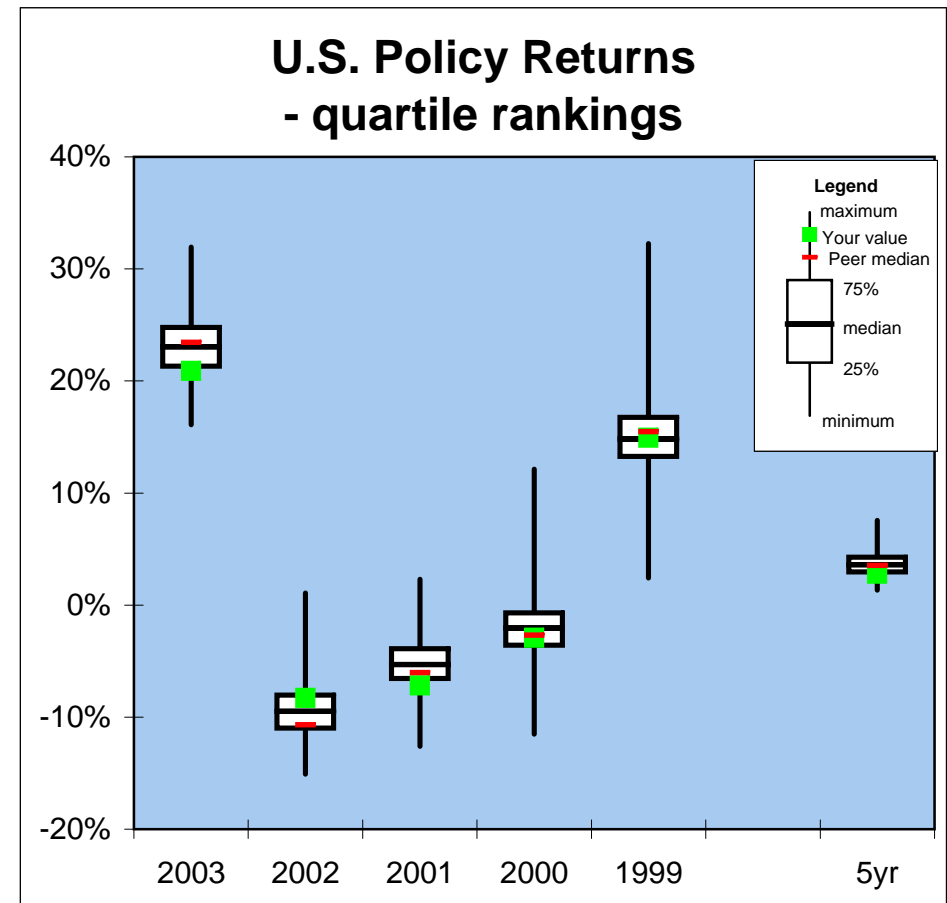
**Policy Return is the component of your Total Return resulting from your policy asset mix decisions. Your 5-yr policy return of 2.8% was below the peer group median of 3.5%.**

Your Policy Return is the return you could have earned passively by indexing your investments according to your investment policy asset mix.

Having a higher or lower relative Policy Return is not necessarily good or bad. This is because your policy return reflects your investment policy, which should reflect your:

- long term capital market expectations
- liabilities
- appetite for risk.

Each of these three factors is different across funds. Therefore, it is not surprising that Policy Returns vary significantly between funds.



**1. Why does your Policy Return differ from average?**

## **Your below US median 5-yr Policy Return reflects the following differences between your benchmarks and policy asset mix versus the US average.**

- The negative impact of your Venture Capital & LBO benchmark. Your 5-yr benchmark of -7.7% was below US average of 5.5%. You use a custom Venture Economics index based on actual private equity returns, whereas most US funds use custom benchmarks based on public equity indices (e.g. Russell 3000 + 400 bps). Note that there can be a considerable difference between private equity returns and public market returns.
- The negative impact of your Combined Domestic Stock benchmark. Your 5-yr benchmark of -0.3% was below the US average of 0.8%. You use a custom PERS Wil2500 index whereas many US funds have separate large cap and small cap benchmarks. The small cap component - often the Russell 2000 (5-yr return of 7.1%) - increased combined returns for them.
- The positive impact of your relative over-weighting in one of the best performing asset classes of the past 5 years: real estate (your 8% 5-yr avg weight versus a US average of 4%).

### **5-year Average Policy Asset Mix**

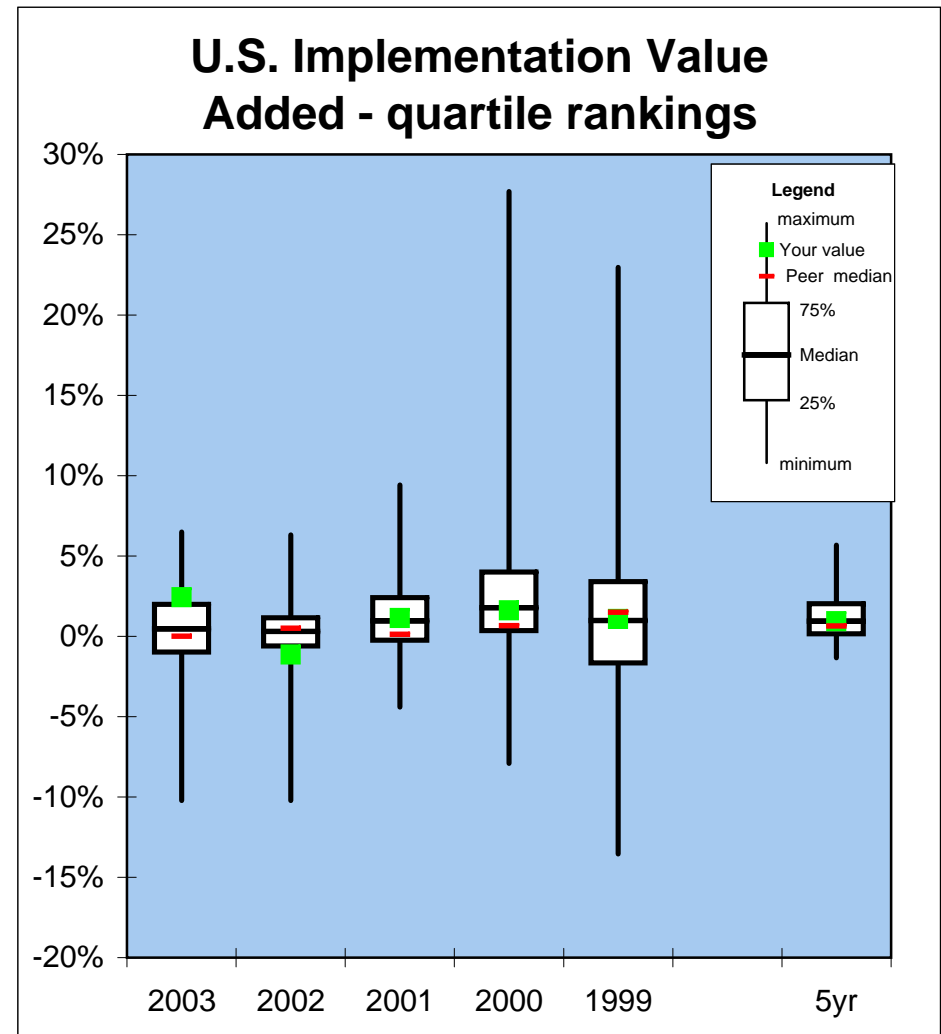
<b>Asset Class</b>	<b>Your Fund</b>	<b>Peer Avg</b>	<b>US Avg</b>
Domestic Stocks	39%	42%	46%
Foreign - Developed Stocks	19%	17%	15%
Foreign - Emerging Markets	0%	1%	1%
Fixed Income	28%	27%	30%
Inflation indexed bonds	0%	0%	0%
Cash	0%	1%	1%
Real Estate & REITS	8%	6%	4%
Private Equity & Hedge Funds	6%	6%	4%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

## 2. Implementation Value Added

**Implementation Value Added is the component of your Total Return from Staff's implementation of Board Policy.**  
**Your 5-yr Implementation Value Added was 0.9%.**

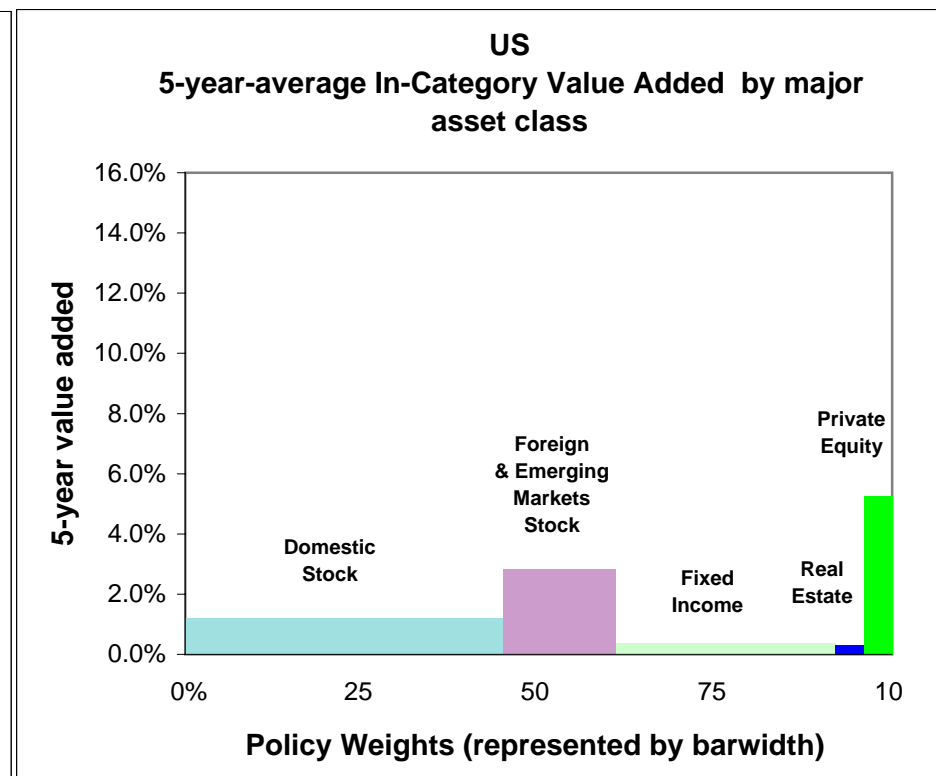
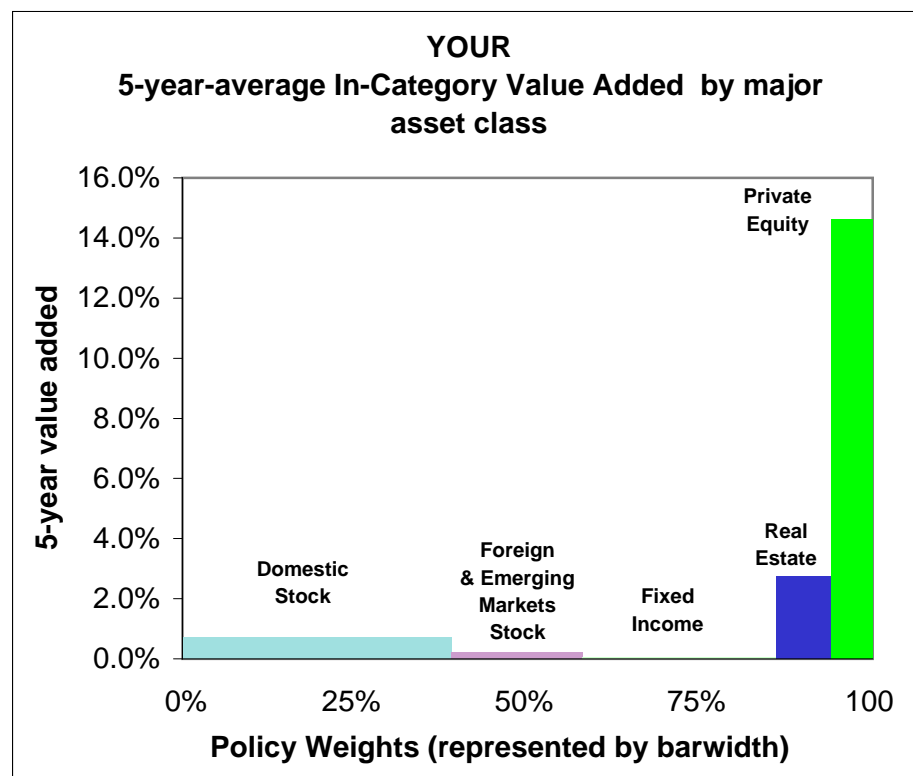
- This compares to a peer median of 0.6%.
- Your value added from implementation decisions equals your total return minus your policy return.
- Your 5-yr Implementation Value Added of 0.9% consisted of 1.3% from In-Category (actual performance relative to benchmarks) and -0.4% from Mix (primarily differences between your actual and policy asset mixes).
- In dollar amount this is an average annual amount of \$1.4 billion.

Year	Actual Return	Policy Return	Value Added		
			Total	In-Category	Mix
2003	23.3%	20.9%	2.4%	1.6%	0.9%
2002	-9.4%	-8.3%	-1.1%	-0.6%	-0.5%
2001	-6.1%	-7.2%	1.1%	1.1%	0.0%
2000	-1.3%	-2.9%	1.6%	3.6%	-2.0%
1999	16.0%	14.9%	1.1%	1.1%	0.0%
5-yr	3.7%	2.8%	<b>0.9%</b>	<b>1.3%</b>	<b>-0.4%</b>



**2. Implementation  
Value Added  
(In-category by Asset  
Class)**

**You had positive 5-yr In-Category Value added in all major asset classes.**



1. Note: Your 5-yr private equity benchmark return was -7.7% versus a US 5-yr average benchmark return of 5.5%. This is one reason for your higher 5-yr value added in this asset class.

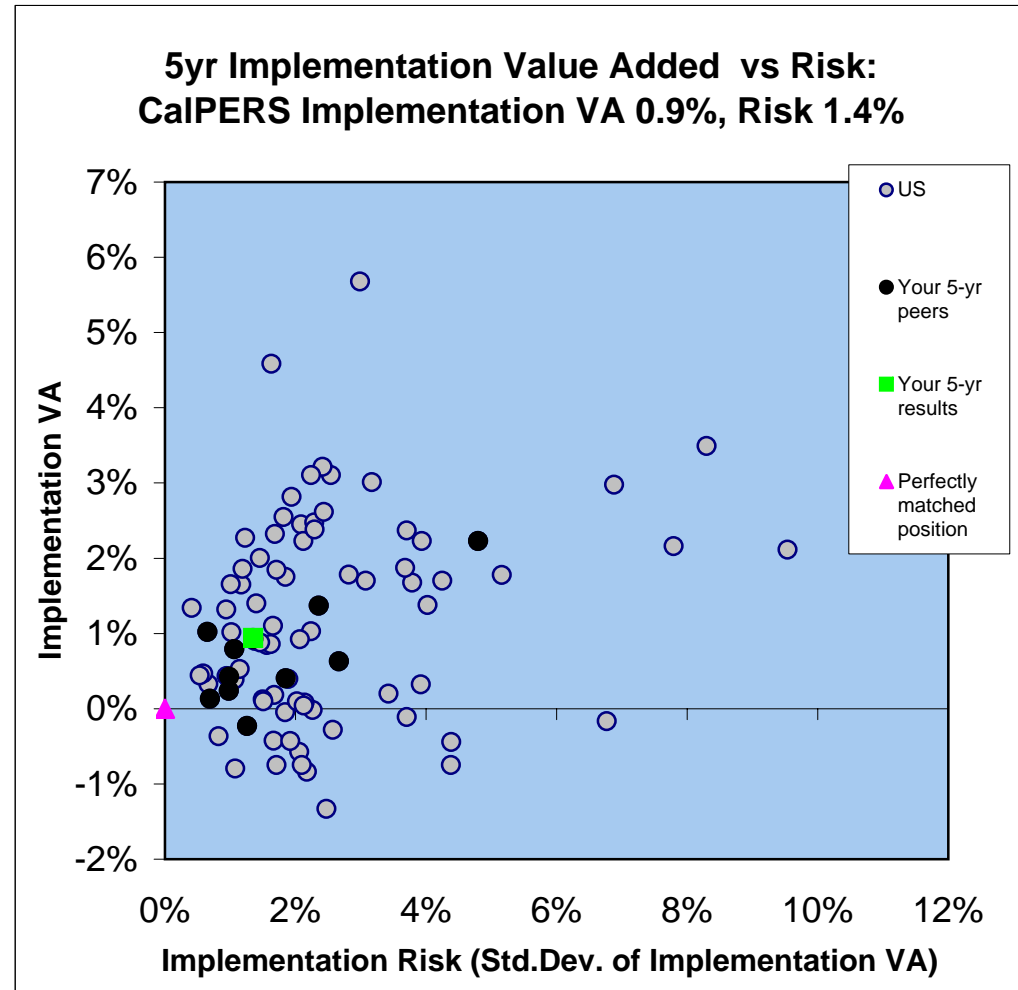
Private equity is difficult to benchmark. It is one of the few asset classes where we accept absolute hurdles or indices with premiums and do not insist on funds using market indices. Thus, there is reduced comparability in value added for this asset class.



## 2. Implementation Risk

**Your 5-yr Implementation Risk of 1.4% was below the US median of 1.9%.**

"Implementation Risk" is the risk of active management. CEM defines Implementation Risk as the standard deviation of your Implementation Value Added.



**4. Costs  
(Total)**

## Asset mix and implementation decisions impact costs. Your asset management costs (including Oversight) in 2003 were \$413.2 million or 26.7 basis points.

- CEM collects investment costs by major asset classes and 4 different implementation styles.
- Oversight, Custodial & Other cost includes all costs associated with the oversight and administration of the investment operation, regardless of how these costs are paid.
- Note that only Asset Management and Oversight costs are included. Costs pertaining to member servicing are specifically excluded.

<b>Your Investment Management Costs (\$000s)</b>				
	<b>Internal</b>		<b>External</b>	
	<b>Passive</b>	<b>Active</b>	<b>Passive</b>	<b>Active</b>
Domestic Equity	690			24,704
Foreign Equity			1,519	20,749
Emerging Equity				4,466
Domestic Fixed Income		7,718		
Foreign Fixed Income				7,457
High Yield Bonds				5,285
Cash & Equivalents		184		
TAA		615		
REITs		123		
Real Estate ex-REITs				107,350
Hedge Funds				4,417
Venture Capital/LBO				201,667
Overlay Programs				2,956
<b>Total Investment Management Costs</b>				25.2bp
<b>Your Oversight, Custodial &amp; Other - asset related (\$000s)</b>				
Oversight of the Fund				9,473
Trustee & Custodial				8,872
Consulting and Performance Measurement				4,397
Audit				579
<b>Total Oversight, Custodial &amp; Other Costs</b>				1.5bp
<b>Total Operating Costs in \$000s</b>				26.7bp
				413,220

**4. Costs**  
- Are they high or low?

## Benchmark Cost analysis suggests that your fund was low cost.

To assess your cost performance, we start by calculating your benchmark cost. Your Benchmark Cost\* is an estimate of what your costs would be using your asset mix and the median cost that your peers pay for similar services.

Your Actual Cost of 26.7 bp was less than your Benchmark Cost of 35.9 bp, and was therefore a low cost fund.

The following pages review reasons behind your low cost status

	in \$000's	basis points
<b>Your Actual Cost</b>	<b>\$413,220</b>	<b>26.7 bp</b>
<b>Your Benchmark Cost*</b>	<b><u>\$557,105</u></b>	<b><u>35.9 bp</u></b>
<b>Your Cost Savings</b>	<b>\$143,885</b>	<b>9.3 bp</b>

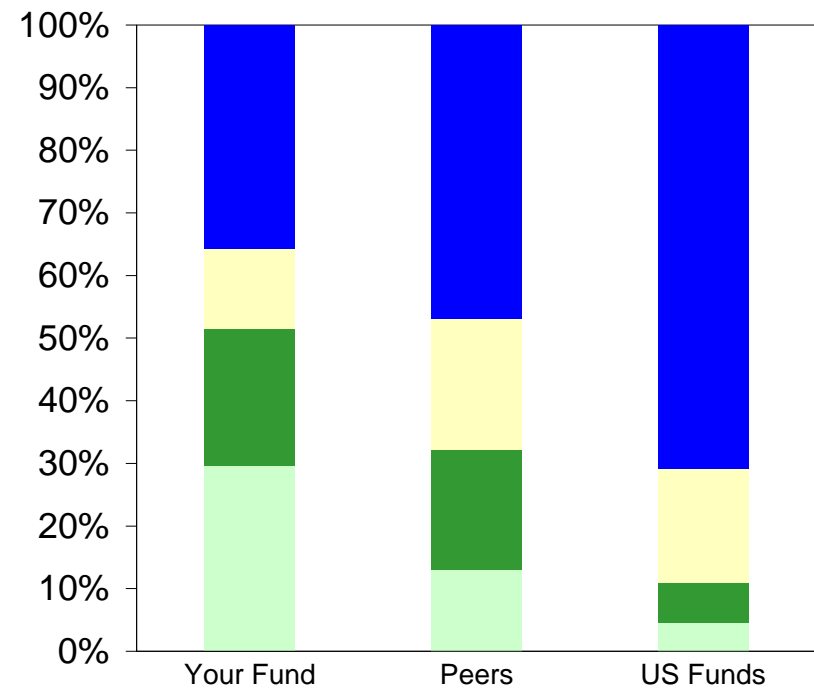
*\*Note: This is a change in methodology. In prior years your Benchmark Cost was derived using regression analysis. A peer median Benchmark Cost allows us to quantify your 'Excess Cost' and quantify the factors that impact this more precisely, as discussed in the following pages.*

#### 4. Costs Is it Style?

**Your fund used significantly less external active management than your peers (36% versus 47% for your peers).**

- External active management is **significantly** more expensive than internal management, or external passive management.
- We quantify the impact of more or less external active management by asset class on the following page.

**Implementation Style**



External active	36%	47%	71%
External passive	13%	21%	18%
Internal active	22%	19%	6%
Internal passive	30%	13%	5%

#### 4. Costs - Impact of Style

## Using less external active management saved you 1.5 bp relative to your peers. Other differences in implementation style had a minimal cost impact.

- Having more or less of an asset class managed through external active management than your peers creates cost differences.

- Impact of differences in lower cost styles refers to the impact caused by your allocation among internal passive, internal active and external passive management, in comparison to your peers.

<sup>1</sup> External Active Cost Premium is the additional cost of external active management relative to the average of other lower cost implementation styles - internal passive, internal active and external passive.

- 'N/A' Indicates insufficient peer data to calculate external active cost premium. This is most often a result of insufficient peer 'lower cost' implementation style data.

Impact from differences in use of External Active management					
	Average Holdings \$M	External Active			Dollar Impact \$000
		Holdings % of asset class		Cost	
		Your%	Peer Avg%	Premium <sup>1</sup>	
Domestic Equity	\$56,827	18.9%	23.8%	24.8	-6,885
Foreign Equity	\$28,590	32.0%	60.8%	27.7	-22,781
Emerging Equity	\$1,651	100.0%	81.2%	49.3	1,532
Domestic Fixed Income	\$30,796	0.0%	45.2%	11.8	-16,362
Foreign Fixed Income	\$6,275	100.0%	N/A	N/A	
High Yield Bonds	\$1,210	100.0%	92.5%	28.6	259
Cash & Equivalents	\$1,812	0.0%	N/A	N/A	
TAA	\$781	0.0%	N/A	N/A	
REITs	\$674	0.0%	50.9%	16.5	-568
Real Estate ex-REITs	\$18,630	100.0%	79.2%	61.5	23,833
Hedge Funds	\$575	100.0%	100.0%	N/A	
Fund of Funds	\$17,150	0.0%	0.0%	N/A	
Venture Capital/LBO (fees pd)		100.0%	97.9%	N/A	
Fund of Funds		0.0%	2.1%	55.3	-2,030
Total	\$164,971	35.6%	46.9%		-\$23,002
External Active Impact in bps					-1.5 bp
Impact of differences in lower cost styles					-0.2 bp
Total Style Impact					-1.7 bp

**4. Costs -**  
Are you paying  
more for similar  
services?

**Your overall Oversight costs were \$14 million lower than your peers and your overlay costs were \$9.8 million lower.**

<b>Oversight, Custodial &amp; Other Costs</b>				
	<b>Your 2003</b>		<b>Peer Median in bps</b>	<b>Impact of the difference in \$000's</b>
	<b>Avg Holdings in \$mils</b>	<b>Costs in bps</b>		
Oversight	155,001	0.6 bp	1.2 bp	-8,976
Custodial/Trustee	155,001	0.6 bp	0.6 bp	-499
Consulting/Performance Measurement	155,001	0.3 bp	0.4 bp	-2,530
Audit	155,001	0.0 bp	0.0 bp	119
Other	155,001	0.0 bp	0.2 bp	-2,643
<b>Total Impact in \$000's</b>				<b>-\$14,530</b>
<b>Total Impact in basis points</b>				<b>-0.9 bp</b>

<b>Overlay Costs</b>				
	<b>Your 2003</b>		<b>Peer Median in bps</b>	<b>Impact of the difference in \$000's</b>
	<b>Avg Holdings in \$mils</b>	<b>Costs in bps</b>		
Overlay	155,001	0.2 bp	0.8 bp	-9,839
<b>Total Impact in basis points</b>				<b>-0.6 bp</b>

**4. Costs -**  
**Are you paying more**  
**for similar services?**

**Your Internally Managed Investment costs**  
**were \$2.3 million lower than your peers.**

<b><i>Internally Managed Investment Costs</i></b>				
	<b>Your 2003</b>		<b>Peer</b>	<b><i>Impact of the</i></b>
	<b>Avg Holdings</b>	<b>Costs</b>	<b>Median</b>	<b><i>difference</i></b>
	<b>in \$mils</b>	<b>in bps</b>	<b>in bps</b>	<b><i>in \$000's</i></b>
Domestic Equity - Large Cap - Passive	46,095	0.1	0.6	-2,267
Domestic Fixed Income - Active	30,796	2.5	2.5	2
Cash & Equivalents - Active	1,812	1.0	1.0	0
TAA - Active	781	7.9	N/A	N/A
REITs - Active	674	1.8	2.5	-47
<b><i>Total Internal Investment Management Impact in \$000's</i></b>				<b><i>-\$2,311</i></b>
<b><i>Total Internal Investment Management Impact in basis points</i></b>				<b><i>-0.1 bp</i></b>

'N/A' Indicates insufficient peer data to calculate peer median cost.

**4. Costs -**  
**Are you paying more**  
**for similar services?**

**Your Externally Managed Investment costs**  
**were \$90.9 million lower than your peers.**

<b><i>Externally Managed Investment Costs</i></b>				
	<b>Your 2003</b>		<b>Peer Median in bps</b>	<b><i>Impact of the difference in \$000's</i></b>
	<b>Avg Holdings in \$mils</b>	<b>Costs in bps</b>		
Domestic Equity - Large Cap - Active	10,732	23.0	25.8	-3,036
Foreign Equity - Passive	19,431	0.8	3.1	-4,523
Foreign Equity - Active	9,159	22.7	32.4	-8,955
Emerging Equity - Active	1,651	27.1	63.8	-6,066
Foreign Fixed Income - Active	6,275	11.9	32.2	-12,777
High Yield Bonds - Active	1,210	43.7	35.3	1,017
Real Estate ex-REITs - Active	18,630	57.6	83.7	-48,678
Hedge Funds - Active	575	76.8	140.8	-3,679
Venture Capital/LBO (fees pd) - Active	17,150	117.6	120.0	-4,153
<b><i>Total External Investment Management Impact in \$000's</i></b>				<b><i>-\$90,850</i></b>
<b><i>Total External Investment Management Impact in basis points</i></b>				<b><i>-5.9 bp</i></b>

'N/A' Indicates insufficient peer data to calculate peer median cost.



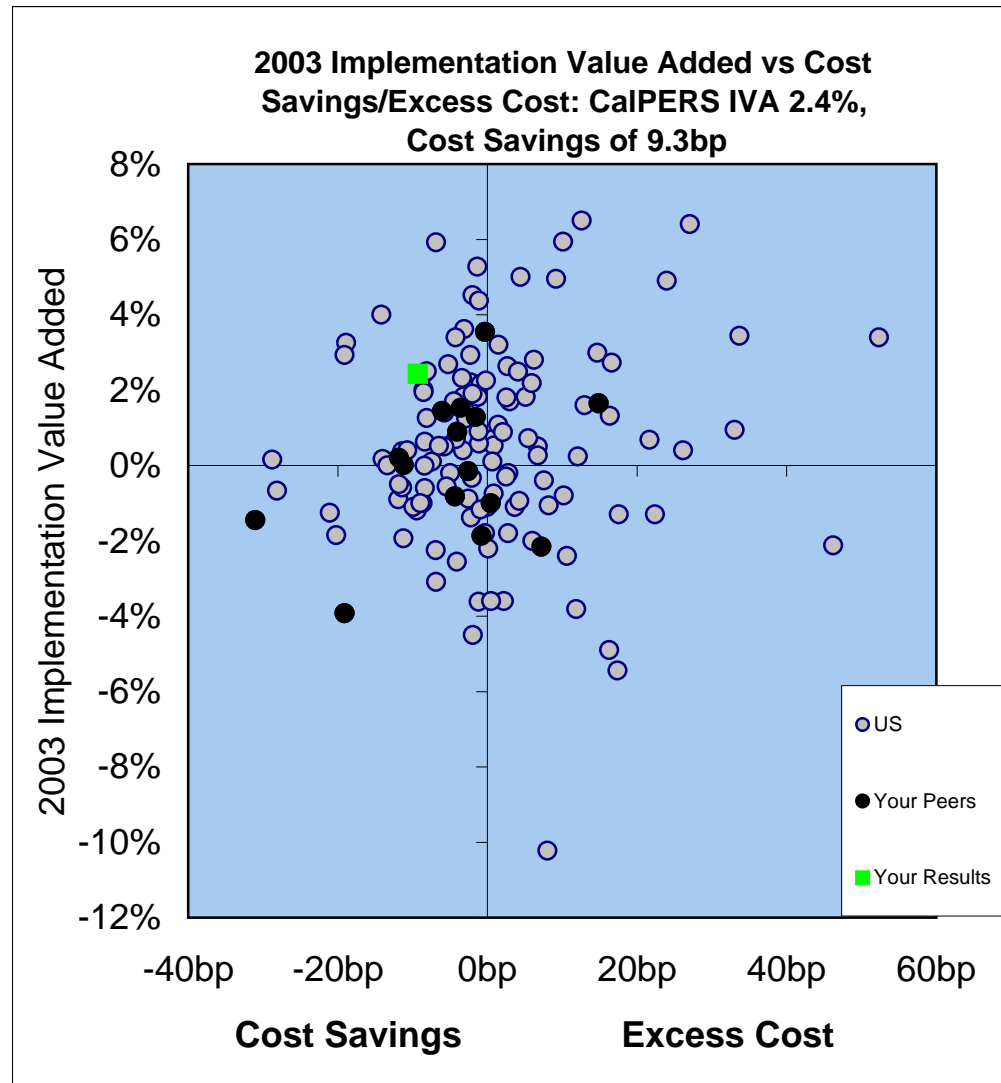
4. Costs -  
Summary

**Your low cost status was a result of using lower cost implementation styles and paying less for similar services. Your total cost savings compared to your peers was over \$143 million.**

<b>Your 2003 Cost Savings Breakdown</b>		
	<i><b>Savings in \$000's</b></i>	<i><b>Savings in basis points</b></i>
Implementation Style Impact	26,354	1.7
Paying more or less for similar services:		
Oversight, Custodial & Other Costs	14,530	0.9
Overlay Impact	9,839	0.6
Internally Managed Investment Costs	2,311	0.1
Externally Managed Investment Costs	90,850	5.9
<b>Total Cost Savings</b>	<b>\$143,885</b>	<b>9.3</b>

**Cost Effectiveness  
Chart**

**For 2003, you were in the positive value added, low cost quadrant.**



## **In summary: Relative to your peer group you have a larger Implementation Value Added and lower cost structure.**

### **1. Policy Return**

- Your 5-yr policy return of 2.8% was below the peer median of 3.5%.

### **2. Implementation Value Added**

- Your 5-yr Staff Implementation Value Added was 0.9% per annum. This was higher than the peer median of 0.4%. In dollar terms this equals \$1.4 billion per annum.

### **3. Implementation Risk**

- Your 5-yr average implementation risk was 1.4%, compared to the US median of 1.9% and the peer median of 1.3%.

### **4. Costs**

- You were a low cost fund. Your 2003 cost of 27 bps was low relative to your Benchmark Cost of 36 bps (i.e. a savings of \$144 million) primarily because you paid less for similar services and received cost savings from your lower cost implementation style of less external active management.